

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-14 are pending in the present application. Claims 1, 9 and 11 are independent claims. Claims 1-14 have been amended by the present amendment.

In the outstanding Office Action, claims 2 and 10 were objected to; claims 2 and 5 were rejected under 35 U.S.C. § 112, second paragraph; claims 1-5, 7-10, 12 and 14 were rejected under 35 U.S.C. § 102(b) as anticipated by Mathis; claims 6 and 13 were rejected under 35 U.S.C. § 103(a) as unpatentable over Mathis; and claim 11 was indicated as allowable if rewritten in independent form.

Applicants thanks the Examiner for the indication of allowable subject matter. In light of this indication, dependent claim 11 has been rewritten in independent form.

Further, claims 2 and 10 have been amended in light of the objections noted in the Office Action. Accordingly, it is respectfully requested this objection be withdrawn.

Similarly, claims 2 and 5 have been amended in light of the 35 U.S.C. § 112, second paragraph, rejection set forth in the Office Action. Accordingly, it is respectfully requested this rejection be withdrawn.

Claims 1-5, 7-10, 12 and 14 stand rejected under 35 U.S.C. § 102(b) as anticipated by Mathis. This rejection is respectfully traversed.

Independent claim 1 has been amended to recite that the moving straight distance is calculated based on a non-GPS velocity of the moving object and an estimation unit time period. Independent claim 9 includes similar features in a varying scope.

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As discussed in the Background of the Invention, it is not easy to estimate the location of a moving object such as a mobile telephone in shadow areas in which GPS data is not received or is unreliable such as in a tunnel or underground passage in which the quality of the received GPS location data is greatly lower (see paragraph [0007], for example). However, according to the presently embodied invention, the moving straight distance of the moving object is calculated using a non-GPS velocity when the moving object is in a GPS shadow area. Therefore, using the calculated moving straight distance based on the non-GPS velocity of the moving object and an estimation unit time period, the presently embodied invention is able to calculate a virtual location data of the moving object even in GPS shadow areas.

On the contrary, Mathis does not distinguish between a moving object in a GPS shadow area and GPS visible area. Rather, in Mathis, a GPS signal is always required to determine a location of a moving object (see column 7, lines 34 and 35, for example). Further, the velocity discussed in column 6 of Mathis is a GPS derived velocity (see in particular lines 13 and 14 in column 6). Mathis does not teach or suggest the claimed combination of the features of the present invention in which the moving straight distance is calculated based on a non-GPS velocity of the moving object and an estimation unit time period.

Accordingly, it is respectfully submitted independent claims 1 and 9 and each of the claims depending therefrom patentable define over Mathis.

Further, it is respectfully submitted the rejection of claims 6 and 13 under 35 U.S.C. § 103(a) as unpatentable over Mathis has also been overcome as claims 6 and 13 are dependent claims.

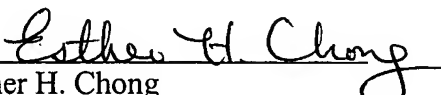
Further, the specification has been amended to correct minor informalities. No new matter has been added.

If the Examiner has any questions or comments, please contact the undersigned at the offices of Birch, Stewart, Kolasch & Birch, LLP.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

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Respectfully submitted,

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